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EXAMINER

STEELMAN, MARY J

ART UNIT

PAPER NUMBER

2191

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,055

Applicant(s)

DEBBINS ET AL.

Examiner

Mary J. Steelman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-13, 15, 16 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-13, 15, 16 and 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Copy of accepted drawing.

DETAILED ACTION

1. This Office Action is in response to Remarks and Amendment filed 4 November 2004. Claims 1 and 13 have been amended. Claims 3, 4, 6, 14, 17-20 have been canceled. Claims 21-25 are newly added. Claims 1, 2, 5, 7-13, 15, 16, and 21-25 are pending.

Drawings

2. In view of Applicant's comments regarding Fig. 3, and Replacement Sheet for Fig. 7, the prior Drawing objections are hereby withdrawn.

Specification

3. The use of trademarks (Examples: Intel, JAVA, Ethernet) has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

In response to Applicant's comments on page 8, 3rd paragraph, the terms are trademarked. Applicant is directed to do a simple Internet search such as "JAVA and trademark" to confirm such information.

As an example, at <http://www.sun.com/policies/trademarks/> you will find:

I. Rules of Proper Trademark Use.

A. Use Sun Trademarks as Adjectives, Never as Nouns.

Please follow every Sun trademark with an appropriate noun consisting of the Sun product or service that is branded with the mark. Sun trademarks are adjectives and may not be used as nouns, or alone as a shorthand way of identifying a product or service. The Sun trademark should be used as an adjective describing a product or service of Sun Microsystems.

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As an example, a google.com search of ' Ethernet and trademark and Xerox' produced this result: [PDF] [Trademark Information](#)

File Format: PDF/Adobe Acrobat - [View as HTML](#)

... **Ethernet** is a registered **trademark** of **Xerox** Corporation.
www.mentor.com/supportnet/documentation/tm_info.pdf - [Similar pages](#)

Claim Objections

4. In view of the amendment to claim 13 and cancellation of claim 20, the prior claim objections are hereby withdrawn.

Claim 7 recites, "The system as recited in claim 6..." As claim 6 has been canceled, Examiner will treat this as if it were —The system as recited in claim 5—

Claim 13, as currently amended, failed to delete, line through, what had been the last limitation: "and for persisting the selected components to form an application program"

Applicant must clarify as to whether that limitation is to remain in the claim. For purposes of examination, Examiner has deleted the limitation.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 13 is rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Claim 13 recites the limitation "pulse sequence server" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 5, 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,850,548 to Williams, in view of US Patent 6,718,533 B1 to Schneider et al.

Per claim 1:

-a component library for storing components written in an object oriented programming language, wherein one or more component includes at least one connection point for receiving an input or providing an output and wherein each component provides a predefined function;

(Williams: Col. 2, line 26, "...such as C++ (object oriented programming language)...", col. 2, lines 34-36, "...programs are constructed entirely out of components which communicate via connections (connection points for receiving an input or providing an output)", col. 3, lines 61-63, "Library: A special component which contains the total set of components available to the system programmer. Arranged in groups for easy access", col. 7, lines 66-67, "the system provides a large set of general purpose components for use in user programs.", col. 5, lines 35-36, "The system employs 'components' for performing work (component provides a predefined function) in the system")

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-a graphic building area, wherein a user selectively moves components from the component library to the graphic building area and selectively graphically links at least one connection point from a selected component to a connection point of another of the selected components, the graphical link providing a software reference to each of the selected components to define an executable application;

(Williams: Col. 2, lines 20-25, "A development system of the present invention comprises a visual programming environment (graphic building area) ...employs 'components' for performing work in the system...", 29-30, "Various components are linked together by establishing 'connections' between their ports...", col. 6, lines 49-65, "...the user first creates a Blank Composite Component...The user then proceeds to select (e.g. double-click) on the Component to "jump inside" the component for creating sub-components...These sub-components correspond to the main functional areas of this sample program. The user may then proceed to choose one of the newly created sub-components (select component) ...", col. 5, lines 46-54, "Various components are linked together by establishing 'connections' between their ports...programs are constructed entirely out of components which communicate via connections.", col. 6, lines 26-29, "Messages arriving at Port 301 of "Example" are sent to the Port of Component A (i.e., Port 311) (linked connection points / software reference to each of the selected components to define an executable application). If during processing of the message Component A generates a new message, that new message (software reference to selected component) is sent to Component B via Connection 313.")

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-the graphical links being modifiable during operation to provide an executable application segment;

(Williams: Col. 5, lines 11-12, "Window includes a client area for displaying and manipulating screen objects (modifying links)...", col. 12, lines 46-56, "...user may now refine (modify links) the model...Other visual components may be added...As the system is live...", col. 22, lines 38-40, "This is followed by methods for adding and deleting connections (graphical links being modifiable during operation to provide an executable application segment) on a particular component...ConectionAdd...ConnectionDelete...")

Regarding the limitations:

-a component for serializing and downloading the executable application to the medical imaging system;

-a component for serializing and downloading the executable application segment to the medical imaging system to modify the executable application in real time.

Williams disclosed a visual development environment for programming with components and connections. Williams disclosed that the application could be modified in real-time (col. 12, lines 46-56 & col. 21, lines 17-20 – component add methods). Williams failed to disclose that the program could be used for medical imaging and that the completed application could be serialized and downloaded for execution.

However, Schneider disclosed a development tool using object oriented modeling that (col. 4, lines 44-45) "supports design; development; execution; test and maintenance. At col. 4,

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lines 52-60, "...the present invention is advantageous for developing software for real-time electromechanical systems...can also be used for ...medical imaging...." Schneider disclosed, col. 10, lines 7-11, "FIG. 2 illustrates an example of a real-time application according to one embodiment of the present invention. In a typical scenario, a **real-time** system is created on a development station using development tool and is then **downloaded to a real-time** computer (download the executable application to the medical imaging system) for execution." (emphasis added) Also, col. 31, lines 49-55, "Once a system diagram has been created...the compiled components are loaded onto the real-time computer...These compiled code files provide executable code for each of these components." Schneider disclosed, col. 9, lines 51-53, "Development tool may be implemented in any suitable programming language; the JAVA programming language (**object oriented**) has been found to work well." (emphasis added), col. 10, lines 21-24, "...components and system diagram files are downloaded over a network connection (downloading the executable application segment)..." Serialization is the process of creating a byte stream for the purpose of transmitting byte code (a component for serializing and downloading) and thus would be obvious when transmitting code written in JAVA programming language in the download process.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to have modified Williams' invention of program development to include downloading a serialized component when developing an application that could include medical imaging, as taught by Schneider because both inventions deal with application development using components, allowing for reusable software (Schneider: Col. 5, line 65) and providing an (Schneider: Col. 6, lines 1-2) "intuitive approach to developing systems..."

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Per claim 2:

-components are displayed as icons.

(Williams: Col. 5, lines 21-24, "During or after cursor movement, the user may generate user-event signals (e.g., mouse button 'clicks' and "drags") for selecting and manipulating objects...", col. 6, lines 64-65, "...Processing Component has a Port 431 and a Port 433, each represented by a port icon." See FIGs. 4C & 4D.)

Per claim 5:

-a property display which enables a user to verify the properties of the component icon by selecting the icon with an input device.

(Williams: Col. 6, lines 53-63, "The user then proceeds to select on the Component to "jump inside" the component for creating sub-components", col. 8, lines 47-49, "Property inspection may also be used to change the default value of a port." See FIGs. 7D & 7E: (col. 2, lines 65-67) "bitmap screen shots illustrating connection of a 'Value' property of a component to a port of a sub-component.")

Per claim 7:

-the connection points of the components are displayed as icons linked to the components.

(Williams, Col. 6, lines 65-67, "...represented by a port icon...the user may proceed to create ports for connecting the components, using the port icons.")

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Per claim 8:

Williams disclosed a visual development environment for object oriented programming with components and connections. Williams failed to disclose that the program could be used for medical imaging in a byte code language, JAVA.

However, Schneider disclosed a development tool using object oriented modeling that (col. 4, lines 44-45) “supports design; development; execution; test and maintenance. Schneider disclosed:

-The system as recited in claim 1 in which the object-oriented programming language is JAVA and the medical imaging system is programmed to translate the executable application to at least one of a C or a C++ program for real-time execution.

(Schneider: Col. 9, line 52, “...the JAVA programming language has been found to work well.”, col. 4, lines 50-60, “...the present invention is applicable to...medical imaging...”. Schneider disclosed that the created program is compiled for downloading over a network. It is well known that compiled code can be native (C code) code for executing.)

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to have modified Williams’ invention of graphical object oriented program development to include JAVA programming language and a medical imaging application translated to C for execution as taught by Schneider because both inventions deal with graphical application development using components, allowing for reusable software (Schneider: Col. 5, line 65) and providing an (Schneider: Col. 6, lines 1-2) “intuitive approach to developing systems...”

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Per claim 9:

Williams disclosed a graphical object oriented program development system, programmed with components and linked ports. He failed to disclose:

-the components include a serialization component, the serialization component allowing a user to transfer code from the application development system to an application server.

However, Schneider disclosed a graphical development tool using object oriented modeling. Schneider disclosed, col. 10, lines 7-11, "FIG. 2 illustrates an example of a real-time application according to one embodiment of the present invention. In a typical scenario, a real-time system is created on a development station using development tool and is then downloaded to a real-time computer (transfer code from the application development system to an application server) for execution." Also, col. 31, lines 49-55, "Once a system diagram has been created...the compiled components are loaded onto the real-time computer...These compiled code files provide executable code for each of these components." Schneider disclosed, col. 9, lines 51-53, "Development tool may be implemented in any suitable programming language; the JAVA programming language has been found to work well." Serialization is the process of creating a byte stream for the purpose of transmitting byte code and thus would be obvious when transmitting code written in JAVA programming language in the download process.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to have modified Williams' invention of graphical program development to include downloading a serialized component when developing an application, as taught by Schneider because both inventions deal with application development using components and linked ports,

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allowing for reusable software (Schneider: col. 5, line 65) and providing an (Schneider: col. 6, lines 1-2) “intuitive approach to developing systems...”

Per claim 10:

Williams disclosed a graphical object oriented program development system, programmed with components and linked ports. He failed to disclose:

-the component library further comprises an external communications link for receiving components and applications transmitted from an external central processing unit.

However, Schneider disclosed: Col. 21, lines 30-37, “FIG. 11B illustrates...an embodiment for repository 135. Repository (library) may be implemented in any suitable database or directory structure and preferably stores all components available...for creating a system diagram. Components may have arrived in repository by way of interface definition tool or they may have been predefined and supplied by a vendor (components received from external sources) or third party...”

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to have modified Williams’ invention of graphical program development to include components received from an external source, as taught by Schneider because both inventions deal with application development using components and linked ports, allowing for reusable software (Schneider: col. 5, line 65), including vendor supplied components, and providing an (Schneider: col. 6, lines 1-2) “intuitive approach to developing systems...”

Per claims 11 & 12:

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Williams disclosed a graphical object oriented program development system, programmed with components and linked ports. He failed to disclose:
-the external communication link comprises an Internet link / Ethernet link.

However, Schneider disclosed: Col. 10, lines 21- 24, "...components...are downloaded over a network connection...", col. 39, lines 31-40, "CPU optionally may be coupled to another computer or telecommunication network using network interface. With such a network interface, it is contemplated that the CPU might receive information fro the network, or might output information to the network..."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to have modified Williams' invention of graphical program development to include an external communication link comprised of an Internet / Ethernet link, as taught by Schneider because both inventions deal with application development using components and linked ports, allowing for reusable software (Schneider: col. 5, line 65), , and providing an (Schneider: col. 6, lines 1-2) "intuitive approach to developing systems..." Schneider expanded on Williams' invention to disclose network transmission to an application server, a feature well known in the art.

9. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,850,548 to Williams, in view of US Patent 6,718,533 B1 to Schneider et al., and further in view of US Patent 5,602,934 to Li et al.

Per claim 21:

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The Williams / Schneider failed to provide specific details regarding the types of code provided in the components by the graphical development system. They failed to disclose:

The application development system as defined in claim 1 wherein the executable application segments provide a data processing pipeline.

However, Li disclosed details related to an MRI system. Li disclosed “data processing”, col. 5, lines 49-52, “...refinement or filter of an MR image.” Data is processed / filtered to produce an improved image.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the William / Schneider invention to include components the provide code to process data, because the graphical development system broadly provided for developing code for any type of system, and by providing a reference to an MRI system as disclosed by Li, it is shown that component code which provides for processing / filtering images is known in the art, and useful to produce an improved result.

Per claim 22:

The Williams / Schneider failed to provide specific details regarding the types of code provided in the components by the graphical development system. They failed to disclose:

The application development system as recited in claim 21, wherein the data processing pipeline comprises a fast Fourier transform and the executable application segment is selectively

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modifiable to provide at least one of an array of magnitude of data and an array of phase data to a data processor.

However, Li disclosed, col. 5, lines 31-43, "The received NMR RF responses are digitized and passed to an MRI image processor which typically includes an array processor (array of magnitude of data and an array of phase data)...wherein programs are stored and selectively utilized so as to control the processing of acquired MR image data to produce digitized image displays...", col. 6, lines 47-51, "Such low-pass filters can also be implemented in the frequency domain using array processors with Fast Fourier Transform (FFT) routines...the filter characteristics can be adjusted (selectively modifiable) by specifying different frequency responses..." Li disclosed processing data, using known techniques to improve the image.)

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the William / Schneider invention to include components the provide code to process data, using a fast Fourier and to provide an array of magnitude of data /an array of phase data to a data processor, because the graphical development system broadly provided for developing code for any type of system, and by providing a reference to an MRI system as disclosed by Li, it is shown that component code which provides for modifying and processing / filtering images is known in the art, and useful to produce an improved result.

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10. Claims 13, 15, 16, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5602934 to Li et al., in view of US Patent 5,850,548 to Williams, and further in view of US Patent 6,173,438 B1 to Kodosky.

Per claim 13:

A magnetic resonance imaging system which comprises:

(Li: FIG. 1)

-a magnet assembly including a polarizing magnet, a gradient coil assembly, and an RF coil;

(Li: Col. 5, line 14, "polarizing magnet structure", col. 5, line 20, "gradient coils", col. 5, line 23, "RF coil structures")

-at least one application server coupled to the RF coil and to the gradient coil assembly to drive the gradient coils and the RF coil to perform a magnetic resonance imaging scan, to acquire imaging data from the scan, and to process the acquired image data from the scan;

(Li: FIG. 1 – server coupled to RF coil and gradient cool assembly to drive coils...acquire imaging data and process data, col. 5, lines 27-28, "MRI sequence controller controlling the ...drivers...", col. 5, lines 41-42, "...control the processing of acquired MR image data to produce digitized image displays...")

-a memory ... (Li: Col. 5, lines 39-41, "computer program storage media (memory) wherein programs are stored and selectively utilized...")

Li disclosed a well known MRI system. Li failed to disclose a library of components written in object oriented programming language. Li failed to disclose:

-a workstation coupled to the application server for downloading program elements to the pulse sequence server to drive the FR coil and the gradient coil assembly, the workstation including a graphical application development system for graphically assembling object-oriented components to provide a waveform of control pulses for driving each of the gradient coils and the RF coil having a display, an input device and a processor programmed to perform application development functions, the application development program including:

-a graphical building area for displaying icons representing components in the component library and responsive to directions from a user entered through the input device to selectively graphically link icons to assemble the components into executable medical imaging applications and to selectively modify the links during operation of the medical imaging applications to produce and download executable program segments which modify the medical image application in real time.

However, Williams disclosed a graphical application development system (col. 2, line 21, col. 2, lines 30-31)) for graphically assembling object-oriented code. Col. 5, lines 38-39, "Components can be constructed with a conventional programming language, such as C++ (object oriented)...") components. Williams disclosed a 'library' of components (col. 3, lines 61-63).

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Williams' invention is generic and broadly disclosed the graphical generation of code for any type of system. Any type of software system may be developed, dependent on the types of components used. Williams disclosed a “graphical building area for displaying icons representing components (col. 5, lines 11-15). Williams disclosed that a developer / user may selectively graphically link icons to assemble components (col. 5, lines 46-47). Williams disclosed modifying the links (col. 12, lines 45-56, “user may now refine the model...Other visual components may be added...As the system is live (real-time)...”

The Li / Williams combination failed to disclose “downloading program elements to the pulse sequence server to drive the FR coil and the gradient coil assembly”/ “download executable program segments which modify the medical image application in real time...”

However Kodosky disclosed a graphical programming system that included components, suitable for downloading (col. 3, lines 62-64). Col. 9, lines 29-32, “The memory media also **stores computer programs (program components) according to the present invention which are executable to download a graphical program for execution** (for downloading an executable application segment) **on an embedded system coupled to the computer system.**” (emphasis added) Col. 22, lines 40-45, “The present invention includes a mechanism for embedded LabVIEW to load DLLs (library of components) and to invoke or call functions in DLLs. These DLLs may be generated by the native development tools (specifically the linker) provided by the real-time operating system used in the embedded system, or by development

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tools used for desktop computer systems...”, col. 22, lines 59-60, “...the embedded system requests the DLL from the host system...”

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention to have modified the Li invention, which disclosed the MRI system, by including Williams’ invention of program development which could develop a program to control an MRI, because Williams graphical development invention broadly may be used to develop any type of control software, dependent on the components linked into the application. Williams: col. 2, lines 34-36, “programs are constructed entirely out of components which communicate via connections.”, Williams: col. 1, lines 54-55, “visual programming environments...let users put more effort into solving their particular problem...” The complexity of MRI software would suitably be simplified by developing the program using a visual programming environment. And to further modify the Li / Williams invention by including details from Kodosky regarding downloading the developed program or modified components, because, of course, downloading and executing the developed software is the ultimate goal of developed software. Kodosky (col. 1, lines 45-55), like Williams (col. 1, lines 49-51), broadly disclosed a graphical development program that could be used to develop and modify any type of software, including software to operate a medical imaging system, as disclosed by Li.

Per claim 15:

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-the icons in the graphical building area include a property area, the property area being activated by the input device to display properties associated with the selected component in the properties area.

(Williams: See FIG. 5B – properties in #520, Col. 5, lines 11-13, “client area for displaying and manipulating screen objects (icons in the graphical building area) ...”, col. 9, lines 27-31, Component Inspector Window provides specific information about a component. In particular, when a component is selected by the user, the Component Inspector displays information about the specific properties and methods of that selected component”, lines 60-62, “...Component Inspector Window is updated to display specific information about the currently selected component.”)

Per claim 16:

-the application development program also includes a property editor which enables a user to input data through the input device to change property values of a component.

(Williams: Col. 8, lines 47-49, “Property inspection may also be used to change (use editor to change property value) the default Value of a port”, col. 9, lines 65-67, “The user can easily modify a property by clicking on the desired property and entering in a new Value.”)

Regarding claim 23:

The magnetic resonance imaging system as recited in claim 13, wherein the library of components includes a program component for downloading an executable application segment.

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Li disclosed a 'magnetic resonance imaging system'. Li / Williams combination disclosed a graphical building area, including a library of components, but failed to disclose 'a library of components includes a program component for downloading an executable segment'. However Kodosky disclosed a graphical programming system that included a library (dlls) of components, suitable for downloading (col. 3, lines 62-64). Col. 9, lines 29-32, "The memory media also **stores computer programs** (program components) **according to the present invention which are executable to download a graphical program for execution** (for downloading an executable application segment) **on an embedded system coupled to the computer system.**" (emphasis added) Col. 22, lines 40-45, "The present invention includes a mechanism for embedded LabVIEW to load DLLs (library of components) and to invoke or call functions in DLLs. These DLLs may be generated by the native development tools (specifically the linker) provided by the real-time operating system used in the embedded system, or by development tools used for desktop computer systems...", col. 22, lines 59-60, "...the embedded system requests the DLL from the host system..."

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention to modify the Li / Williams combination, by including details from Kodosky regarding downloading the developed program or modified components, because, of course, downloading and executing the developed software is the ultimate goal of developed software. Kodosky (col. 1, lines 45-55), like Williams (col. 1, lines 49-51), broadly disclosed a graphical development program that could be used to develop any type of software, including software to operate a medical imaging system, as disclosed by Li.

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Per claim 24:

The magnetic resonance imaging system as recited in claim 13, wherein the executable application segment provides a data processing pipeline.

(Li: Col. 5, lines 49-52, "...refinement or filter of an MR image." Data is processed / filtered to produce an improved image.)

Per claim 25:

The magnetic resonance imaging system as recited in claim 24, wherein the data processing pipeline comprises a fast Fourier transform and the executable application segment is selectively modifiable to provide at least one of an array of magnitude data and an array of phase data to a data processor.

(Li: Col. 5, lines 31-43, "The received NMR RF responses are digitized and passed to an MRI image processor which typically includes an array processor (array of magnitude of data and an array of phase data)...wherein programs are stored and selectively utilized so as to control the processing of acquired MR image data to produce digitized image displays...", col. 6, lines 47-51, "Such low-pass filters can also be implemented in the frequency domain using array processors with Fast Fourier Transform (FFT) routines...the filter characteristics can be adjusted (selectively modifiable) by specifying different frequency responses..." Li disclosed processing data, using known techniques to improve the image.

Response to Arguments

11. Applicant's arguments with respect to claim 1, have been addressed in the rejection of claim 1. New art has been added regarding the 'downloading' of a graphically developed program.

12. Applicant's arguments with respect to claim 13 have been considered but are moot in view of the new grounds of rejection. A reference providing the well known features of an MRI system has been provided. Broadly the combination disclosed graphical program development for any type of system, depending on the components used. New art has been added regarding the 'downloading' of a graphically developed program.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2191

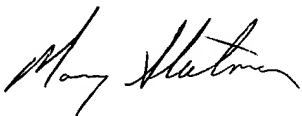
14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached at (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

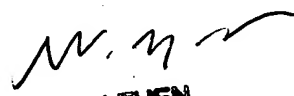
Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman



03/30/2005


WEI Y. ZHEN
PRIMARY EXAMINER